

Appendix F

METHODOLOGIES FOR ANALYZING IMPACT

GEOLOGIC RESOURCES

Adverse effects on geologic resources are evaluated based on the potential for removal or rehabilitation actions to result in alternation to geological features, processes, or resources. Since the P140 system is not intended for future use, the potential effects of geological processes, such as earthquakes on the system are not relevant. The action alternatives are not expected to have any impacts on mineral resources.

Adverse effects on geologic resources are considered significant if project activities would:

Disturb or otherwise adversely affect unique geologic features or geological features of unusual scientific value for study or interpretation;

Trigger or accelerate geological processes, such as landslides;

Result in substantial alteration of topography beyond that which would result from natural erosion and deposition;

Impact assessment of paleontological resources includes the identification of the importance of paleontological remains and the evaluation of effects on paleontological resources. The importance of paleontological remains can be determined by the types of fossils, the geological age of the remains, the assemblage associate (the unique biological association of organisms), the lithology and age of the rock units, and its rarity or uniqueness.

A paleontological resource can be considered to have scientific importance if it fulfills any of the following: provides important information on the evolutionary trends among organisms by relating living inhabitants of the earth to extinct organisms; provides important information regarding the development of biological communities or the interaction between botanical and zoological biota; demonstrates unusual or spectacular circumstances in the history of life; is in short supply and in danger of being depleted or destroyed by the elements, vandalism, or commercial exploitation and is not found in other geographic locations; is recognized as a natural aspect of our national heritage; lived prior to the Holocene (-11,000 B.P); and is not associated with an archaeological resource (as defined in Section 3(1) of the Archaeological Resources Protection Act of 1979 [16 USC 470bb(1)]).

Adverse effects on paleontological resources are considered significant if activities result in the permanent loss of vertebrate or invertebrate fossils that are considered to have scientific importance.

SOIL RESOURCES

Effects on soils are considered significant if project activities would:

Result in soil erosion, soil compaction, and/or soil mixing that would prevent long-term, successful rehabilitation and eventual reestablishment (within 50 years) of existing vegetative cover.

Reduce the long-term productivity of agricultural land due to disruption, mixing, displacement, or compaction of soils.

APPENDIX F

1 **AIR QUALITY**

2 Adverse effects on air quality are considered significant if:

3 Construction emissions result in a direct violation of local, state, or federal air quality
4 standards.

5 Construction activities are inconsistent with local air pollution control district requirements.

6 In San Bernardino County, construction emissions exceed the Mojave Desert Air Quality
7 Management District's (MDAQMDs) significance thresholds for construction emissions, as
8 follows: CO: 100 tons/year; VOCs: 25 tons/year; NOx: 25 tons/year; and PM10: 15
9 tons/year.

10 **NOISE**

11 Adverse effects on noise are considered significant if noise:

12 Exceeds county or city noise elements, standards, or ordinances in level, timing, or duration;

13 Exceeds a day-night sound level (L_{dn}) of 55 dB(A) within any Noise-Sensitive Area (NSA),
14 such as residences. [The EPA identified 55 dB(A) as the annual average outdoor noise level
15 sufficient to protect public health and welfare in sensitive areas (EPA 1978).]

16 **WATER RESOURCES**

17 Adverse effects on surface water bodies (including washes) are considered significant if activities:

18 Result in a direct discharge of sediment into a flowing water body;

19 Result in a direct discharge of petroleum or hazardous material into a flowing water body;

20 Result in a short- or long-term increase of sediment loads and resuspension of sediments;

21 Alter streambed channeling so that it results in short or long-term erosion or loss of riparian
22 vegetation.

1 **VEGETATION**

2 Adverse effects on vegetation are considered significant if activities:

3 Result in the long-term substantial loss of a common vegetation type within a local region. (A
4 substantial loss is defined as a loss greater than that attributable to natural variability that results in a
5 measurable change in the diversity of species or number of species in a local area.)

6 Result in the long-term, substantial loss of vegetation in a sensitive plant community.

7 Lead to the expanded range of existing, or the introduction of new, exotic weed species so that they
8 interfere with existing native vegetation or successful native revegetation of disturbed areas.

9 **COMMON WILDLIFE**

10 Adverse effects on wildlife resources are considered significant if activities would:

11 Cause a long-term, substantial loss in the local population or habitat of any native animal or in overall
12 biological diversity. (A substantial loss is defined as a loss greater than that attributable to natural
13 variability that results in a measurable change in the diversity of species or number of species in a local
14 area.)

15 Substantially interfere in the short- or long-term movement of migratory animals.

16 **SPECIES OF CONCERN**

17 Species of concern include both special-status species (federally or state-threatened or endangered species,
18 federally proposed or candidate sensitive species, or NPS- or BLM-designated sensitive species) as well as other
19 federal or state species of concern identified by state or federal agencies.

20 Adverse effects on species of concern are considered significant if project activities would:

21 Result in the direct mortality of an individual of a special-status species.

22 Result in the loss of designated critical habitat.

23 Result in temporary alteration or loss of habitat for special-status species or increased
24 mortality or lowered reproductive success of special-status species.

25 Conflict with state or federal plans protecting special-status species and their habitat.

1 **CULTURAL RESOURCES**

2 The assessment of project effects on cultural resources is based on the application of explicit criteria for
3 determining resource and impact significance.

4 Significance of Historic Resources - The significance of historic and prehistoric resources is evaluated based on
5 the criteria for inclusion in the National Register of Historic Places (36 CFR 60.4).

6 Significance of Project Effects on Cultural Resources - Project effects on cultural resources could include:
7 alteration, destruction, or loss of significant scientific, cultural, historic and Native American resources; physical
8 destruction, damage, or alteration of all or part of a property; alteration of the character of the property's
9 surrounding environment that contributes to a property's qualification for the National Register; introduction of
10 visual, audible, or atmospheric elements that are out of character with a property or that alter its setting; or
11 neglect of a property resulting in its deterioration or destruction.

12 Significance of project effects on cultural resources are defined as follows:

13 Significant impacts are adverse effects that diminish the integrity, research potential, or other
14 characteristics that make a cultural resource significant or important.

15 Adverse, but less than significant, impacts are those that alter the characteristics of a resource,
16 yet do not diminish the resource's significance, such as removal of a small, badly-disturbed
17 portion of an archaeological site or impacts on non-significant resources.

18 Beneficial impacts involve the enhancement of a resource or the preservation of a resource
19 currently being damaged by natural or human factors.

20 **LAND USE AND RECREATION**

21 Adverse effects on land use are considered significant if project activities would:

22 Conflict with existing land use plans, policies, or regulations established by a jurisdiction directly
23 affected by the project or approved community development plans or goals.

24 Conflict with, or preclude, existing permitted land uses in the short- or long-term.

25 Result in the conversion of prime agricultural land to non-agricultural use.

26 Adverse effects on recreation and public interest areas are considered significant if project activities:

27 Result in the temporary preclusion during a peak season or a short- or long-term preclusion of use of a
28 substantial portion of an established or planned recreation site, area, or trail.

29 Result in the long-term degradation of a substantial portion of an established or planned
30 recreational site, area, or trail.

31 Result in the long-term degradation of a specially managed recreational area, such as a wilderness,
32 wilderness study area, national historical trail, or other environmentally sensitive recreational area.

TRANSPORTATION AND UTILITY CORRIDORS

Adverse effects on transportation are considered significant if project activities would:

Result in temporary traffic delays of greater than 30 minutes for minor roadways and 15 minutes for major roadways.

Result in temporary safety hazards to passing vehicles, bicycles, pedestrians, or nearby residents during construction.

Result in long-term changes to the level-of-service (LOS) of a roadway or changes greater than 3 months.

Result in any short-term or long-term degradation of roadway surfaces for any roadway recognized by local, state, or federal highway agencies.

Result in a disruption of utility service including damage to telephone, power, and water transmission lines or rail service.

The potential impact of the action alternatives was evaluated against transportation significance criteria using qualitative and quantitative measurements for disruption to roadways and utilities, safety hazards, and cable patrol route elimination.

VISUAL AESTHETICS

Adverse effects on visual aesthetics are considered significant if project activities:

Are inconsistent with the visual quality objectives or standards of visual management plans or policies.

Result in degradation of views in heavily used recreational areas for more than 3 months.

Substantially degrade the character of the project area or an existing viewshed, or alter the character of a viewshed by the introduction of anomalous structures or elements.

Result in changes in the expectations of viewers and a negative impression of a viewshed.

Two components are involved in determining levels of visual contrast: the type and extent of physical contrast, and the visibility of a project given the landscape's ability to absorb or conceal it. Impact levels vary depending on whether an area was modified previously, the impact's duration, the visibility of the project, and the number of viewers.

HAZARDOUS MATERIALS AND SAFETY

Adverse effects related to hazardous materials and safety are considered significant if project activities:

Result in soil contamination (contamination of soil at concentrations above local, state, or federal hazardous waste levels).

Result in mobilization of any existing soil contamination creating potential pathways of human or ecological exposure.

Result in worker or public exposure to contamination or hazardous materials in excess of state or federal OSHA exposure levels.

SOCIOECONOMICS AND ENVIRONMENTAL JUSTICE

Methods used in assessing the socioeconomic effects of the action alternatives include the development of significance criteria, quantifying measurable socioeconomic factors, and the use of professional judgment for unmeasurable factors. The analysis focused on temporary and short-term impacts with consideration given to long-term impacts where appropriate. Key factors in the analysis include the number of construction workers, project duration, expenditures, and revenues.

Adverse effects on socioeconomics are considered significant if project activities would:

Cause the vacancy rate for temporary housing to fall to less than 5 percent in any affected location.

Result in a short-term or long-term reduction in tax revenues of any affected municipality of more than 10 percent.

Result in a loss of more than one percent of annual tourist revenue in any affected city or county that is not offset by construction crew visitor-service related expenditures.

Result in temporary displacement or disruption of a business for more than 3 days during construction.

Result in a long-term loss of grazing revenue of greater than 10% in any affected grazing management district.

Environmental justice relates to potential disproportionate project effects on high-minority and low-income populations. High-minority populations and low-income populations were defined in the Affected Environment section.

Adverse effects are considered significant if project activities would:

Result in any high-minority or low-income populations bearing a disproportionate share of adverse project impacts.

1 Result in any high-minority or low-income populations bearing a disproportionate share of
2 adverse cumulative impacts taking into account existing conditions.

3 A number of additional socioeconomic indicators were considered but dismissed in determining the impact to
4 the affected socioeconomic environment. These issues included the cost of permanent housing, capita and
5 median incomes, education levels, agricultural production, occupation growth sectors, and community facilities
6 and services such as schools, police and fire protection, and medical services.